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IN THE
Supreme Court of the United States
OCTOBER TERM, 1998

AMOCO PRODUCTION COMPANY, *et al.*,
Petitioners,

v.

SOUTHERN UTE INDIAN TRIBE,
Respondent.

On Writ of Certiorari to the United States Court of Appeals for the Tenth Circuit

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BRIEF OF *AMICUS CURIAE* NATIONAL MINING ASSOCIATION IN SUPPORT OF RESPONDENT

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BRIEF OF *AMICUS CURIAE* NATIONAL MINING ASSOCIATION IN SUPPORT OF RESPONDENT

INTEREST OF *AMICUS CURIAE*

The National Mining Association ("Association")[1] is a trade association representing producers of most of America's coal, metals, and industrial and agricultural minerals.[2]

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[1] The National Mining Association was established in 1995 through the combination of the two longstanding trade associations of the mining industry—the American Mining Congress founded in 1897 and the National Coal Association founded in 1917.

[2] Counsel for the parties have consented to the filing of this *amicus* brief. Their letters of consent have been filed with the Clerk of the Court. No party or its counsel has authored any part of the Asso-

Its membership also includes manufacturers of mining and mineral processing machinery and supplies, transportation, financial and engineering firms, and other businesses related to mining. The Association's membership includes the producers of more than 70% of the coal mined in the Nation, many of which operate coal mines, or lease coal reserves, on public lands including lands where the United States reserved the coal deposits under the 1909 and 1910 Coal Lands Acts, 30 U.S.C. §§ 81 & 83-85.

The principal purpose of *Amicus* is to represent those with interests in the Nation's mineral resources industries in the important public policy issues affecting the development and use of mineral resources. Toward this end, *Amicus* seeks to develop policies that will foster the efficient production, distribution and use of mineral products.

Coal has served as the backbone of our Nation's industrial and economic expansion. Coal is the primary source of energy produced domestically. See Energy Information Administration, *Monthly Energy Review*, February 1999 at 5. It provides the source of fuel for the generation of more than 50% of the electricity consumed in this country. *Id.* at 95. Coal also supplies the source of coke for the iron, steel and other industries, and the carbonization process for converting coal to coke yields coal gases for heating and coal chemicals for manufacturing diverse products including solvents, medicines, dyes and plastics. See generally Energy Information Administration, *Coal Data: A Reference* 30-36 (1995) ("*Coal Data*"). Because it is an important source of energy and raw material, coal reaches almost every phase of our national daily life and well-being.

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ciation's brief. No person or entity other than the Association and its counsel has made a monetary contribution to the preparation or submission of this brief.

Coal deposits are located in 38 states, and over 1 billion tons are mined annually from mines in 25 states. Energy Information Administration, *Coal Industry Annual* 4 (1998). More than one-third of the annual production occurs on lands where the coal and mining rights are secured through leases with the United States and Indian tribes. *Id.* at 21. Safe and productive coal mines depend upon dominion and control over the coal resource and mining conditions. As it stands, the decision below avoids the grave consequences that would follow if legal title and control over the coal resource were split between parties who do not share the same interest in the purpose and manner in which it is to be exploited.

BACKGROUND

A. The Origin and Composition of Coal.

Coals originated from the luxurious vegetation produced from the sun's heat in early geological times. Immense trees and ferns were piled upon another in circumstances which prevented the free access of air. At various intervals, wind and water covered this mass of plant debris with sediment, sand and dirt to form the overburden materials now found above coal deposits. Over millions of years, these layers of vegetative material were subjected to moisture, heat and pressure and, through a biochemical and geochemical process commonly known as "coalification", cellulose and other organic material decreased in moisture and increased in carbon content. See Richard Neavall, *Origin, Petrography and Classification of Coal, in Chemistry of Coal Utilization* 92-95 (Martin Elliot ed., 2d Supp. Vol. 1981). In this manner, vegetation was converted progressively to peat, lignite, sub-bituminous and bituminous coals, and finally to anthracite. See American Society for Testing and Materials, *Designation: 388 Stand-*

ard Classification of Coals By Rank (1998) (classifying coals according to degree of metamorphic alteration).

The characterization of coal as a "combustible rock" is, at best, an oversimplification. Superficially, coal appears to be a solid material; however, its composition and structure are much more complex. The physical structure of coal has been described as a solid colloid, in other words, "a solid dispersion of porous particles". Ann G. Kim & F.N. Kissel, *Methane Formation in Coalbeds, in* Department of the Interior, *Methane Control Research: Summary of Results, 1964-1980* 23 (Bureau of Mines Bulletin 687, Maurice Deul & Ann G. Kim eds., 1988) (*"Methane Control Research"*). Coal has been also likened to a fruitcake inasmuch as it is "formed initially as a mixture of diverse ingredients that are then altered (metamorphosed) in a natural baking process leading to a final product that is visibly heterogenous." Neavall, *supra,* at 93. The principal ingredients are organic material (macerals), mineral matter, and water and gases in submicroscopic pores. *Id.* at 92. During the coalification process, first oxygen and then hydrogen evolve from the "carbon backbone" as low molecular weight substances such as carbon dioxide, water and methane. *Id.* at 96.

Methane (CH_4) is the smallest of these organic molecules in coal. Because coal is extremely porous with a very large internal surface area, methane molecules are adsorbed, or fixed, within coal's extensive network of micropores. Unlike free methane, found in fractures and cavities in rock, methane in coal is primarily adsorbed as a monomolecular layer on the internal surface of these micropores. See Kim & Kissel, *supra,* at 22; Herbert Black, *Update on U.S. Coalbed Methane Production, in* Energy Information Administration, *Natural Gas Monthly,*

October 1990 at 4.[3] The release, or desorption, of methane from coal's microstructure occurs when pressure in the coal seam drops, for example, through the mining or drilling into the coal. International Energy Agency Coal Research, *Methane Emissions from Coal* 8 (November 1992); Maurice Deul & Ann G. Kim, *Methane in Coal: From Liability to Asset,* 61 Mining Congress J. 28-29 (November 1975).

These and other unique physical characteristics of coal distinguish it from the gas bearing rocks, or reservoirs, that contain hydrocarbon gas and liquids. While the composition of coal is 90 percent organic, conventional gas-bearing rocks are almost completely inorganic. Jacki L. Kelly, *Coalbed Methane: From Nuisance to New Source,* 12 Gas Research Institute Digest 6 (Summer 1989). Coal does not store methane like the typical natural gas reservoirs where gas is held "freely" in the pores of the inorganic rock. Instead, most of the methane in coal is molecularly bound in the coal. *Id.*; Kim & Kissel, *supra,* at 22.

B. Coal Mining and Methane.

Coal is extracted from beds or seams primarily by either surface or underground mining methods. Whenever coal is mined, the pressure in coal is lowered and the adsorbed methane is liberated to the atmosphere or mine workings. In general, larger amounts of methane are associated with underground mines because the deeper coals

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3 Presssure and, to a lesser degree, temperature are the principal factors that control the quantity of methane adsorbed in the coal. As pressure increases (and coal rank increases) so does coal's capacity to adsorb methane. Kim & Kissel, *supra* at 22. Because the coalification process results in the formation of more methane than the coal can adsorb, the excess migrates to the surrounding rock strata. International Energy Agency Coal Research, *Methane Emissions from Coal* 6-7 (November 1992).

are held under greater pressure and can hold more methane. Much of the methane in coal is released only when coal is broken, and the finer, or smaller, the pieces produced during mining, the greater the rate of methane liberation. Society of Mining Engineers, *Mining Engineering Handbook* § 3.15.4 (Ivan A. Given ed., 1973); National Research Council, *Toward Safer Underground Mines* 33 (1982).

Methane, when combined with certain proportions of air, is explosive. *Mining Engineering Handbook, supra* (explosive methane concentrations range between 5%-15%, but ignitions can occur below 5% and as high as 20%). It is also the trigger for the more violent dust explosions that have cost countless lives in the coal mines. *Id.* To control this hazard, mine operations ventilate the mine workings in order to dilute, render harmless and sweep the mine of poisonous and explosive gases released in varying degrees by the coal seams as they are mined. Ventilation is essentially a method of producing, conducting and distributing a constant current of fresh air through the mine workings and returning the impure air to the outside atmosphere. Jed H. Mosgrove, *Ventilation and Dust Control, in Elements of Practical Coal Mining* 206 (Samuel M. Cassidy ed., 1973). Effective ventilation methods include the use of high-pressure surface fans with properly laid-out and unobstructed air courses as part of the mine plan design. *Id.* As deeper and gasier coal seams are mined, operations may supplement these ventilation methods with methane drainage (or degasification) techniques in advance of mining. See Deul & Kim, *Methane in Coal, supra,* at 28.

Coal miners have long associated unwholesome and lethal gases with coal. Maurice Deul & Ann G. Kim, *Research in Methane Control, in Methane Control Research,*

supra, at 3 ("The presence of these gases were noted toward the end of the 16th century"). Although early miners lacked the means to detect the composition of the gas mixtures they encountered, they formulated their own descriptive terminology that reflected the effect these gases had upon themselves and their working environment. "Firedamp" described methane mixtures that would burn or explode. "Chokedamp" or "blackdamp" described conditions when gas mixtures displaced oxygen so as to extinguish the miner's lamp and cause suffocation. Jed H. Mosgrove, *Mine Gases, in Elements of Practical Coal Mining* 187 (Samuel M. Cassidy ed., 1973).[4]

As coal miners began to extract coals found further below the surface, the lethal nature of methane took a deeper toll. It is reported that severe methane explosions occurred with greater frequency in British mines early in the 18th century. Deul & Kim, *Research in Methane Control, supra,* at 3; see also Everett M. White, *Fires and Explosions, in Elements of Practical Coal Mining* 227 (Samuel M. Cassidy ed., 1973). The first reported coal mine explosion in the United States occurred near Richmond, Virginia in 1810, and mine explosions occurred with increasing frequency in the coalfields after 1875. H.B. Humphrey, *Historical Summary of Coal Mine Explosions in the United States* 3-5 (Bureau of Mines Information Circular 7900, 1959); Deul & Kim, *Research in Methane Control, supra.*

The coal mining states began to enact coal mine safety legislation in the latter part of the 19th century. National Research Council, *supra,* at 51. Most of these state laws included some form of minimum ventilation requirements to dilute methane and other gas concentrations. *Id.* The same concerns for the well-being of coal miners in the

[4] The reference to "damps" for these gases may have been derived from the German word "dampf", meaning gases or vapors. *Id.*

Territories apparently spurred Congress to enact the first federal coal mine safety law in 1891. Territorial Mine Inspection Act, Act of March 3, 1891, ch. 564, 26 Stat. 1104. The Act directed that the coal mine inspector appointed in each Territory inspect and report on the conditions of the coal mines to the Secretary of the Interior and the governor of the Territory. *Id.* § 3, 26 Stat. 1104-05. The Act also prescribed specific ventilation standards for any coal mine at a depth of one-hundred feet or more "so as to dilute and render harmless . . . the noxious or poisonous gases." *Id.* § 6, 26 Stat. 1105.

Coal mine safety remains the subject of comprehensive federal regulation under a law that continues to place special emphasis on the detection and control of methane. Federal Mine Safety and Health Act ("Mine Safety Act"), 30 U.S.C. § 863 (*e.g.*, continuous operation of mechanical surface fans for ventilation; minimum air velocity and maximum methane concentrations; pre-shift, daily and weekly methane examinations; methane monitors and detection devices; automatic deenergizing of equipment and evacuation when methane concentrations exceed 1.5%). The omnipresent danger posed by methane to coal miners is no less serious today than a century ago. According to the Bureau of Mines, "[e]ven before 1890, the causes of explosions were known and rudimentary methods for reducing hazards were available." Deul & Kim, *Research in Methane Control, supra,* at 3. Today, improvements in technology to detect and control methane concentrations and the stricter standards prescribed by law have greatly reduced (but not eliminated) the frequency of these tragedies as well as the human toll they exact. See Humphrey, *supra,* at 21 (reporting almost 400 deaths annually between 1901-1910 from coal mine explosions): Mine Safety Health Administration, *Mine Injury and Worktime Quarterly* 18 (Closeout ed. 1997) (no deaths but 10 injuries from gas or dust explosions in 1997).

C. The Commercial Extraction of Methane from Coal.

Although the presence of methane in coal has been known for centuries, its "commercial discovery" is of most recent vintage. The combination of dwindling gas reserves and new tax credits for non-conventional fuels stimulated interest in the commercial exploitation of what has always been considered a hazardous burden of the coal estate. See Herbert T. Black, *U.S. Coalbed Methane Production, in* Energy Information Administration, *Natural Gas Monthly,* January 1994, at 1.

Since the object of commercial extraction of methane from coal is not the free gas associated with the surrounding rock strata, but rather, the methane molecularly bound in the coal, the extraction methods target and complete a well in the coal deposit. See Kelly, *supra,* at 6-8; Black, *Update on U.S. Coalbed Methane Production, supra,* at 4. In what is referred to as an "open hole" completion, a vertical borehole is drilled and cased above the coalbed, and the borehole is then extended into the coal. The borehole opening changes the equilibrium of the coalbed by reducing the pressure which causes the methane to desorb from the coal. M. A. Trevits et al., *Methane Drainage Through Small-Diameter Vertical Boreholes, in Methane Control Research, supra,* at 106.[5]

In many coals, the open-hole technique will not yield sufficient methane. In order to increase the rate of desorption, stimulation techniques are used to artificially induce further physical changes in the coal. See *Legal*

[5] Because coal is porous, and the pores are saturated with water, water is pumped continuously to reduce the pressure and release the methane from the coal. *See* Kelly, *supra,* at 6.

Environmental Assistance Foundation, Inc. v. U.S. Env't. Protection Agency, 118 F. 3d 1467, 1470-71 (11th Cir. 1997) (coalbeds must be fractured to induce a significant flow of gas). The most frequently used stimulation technique is known as hydrofracturing (or "fracing"), and involves the injection of fluids under pressure to increase the permeability of the coal and increase the coal's surface areas to allow the methane to desorb. Suspended solids, such as sand, are added to the fluid as a propping agent in order to hold open the fractures created by the fluid injection. Trevits, *supra*, at 110; Deul & Kim, *Methane in Coal, supra*, at 29.

SUMMARY OF ARGUMENT

In determining whether a substance is included in the surface estate or mineral estate under public land laws, this Court looks to the use of the surface estate that Congress contemplated and the purpose of the mineral reservation. In opening coal lands to settlement under the 1909 and 1910 Acts, Congress plainly expected that the surface would be used by settlers for agricultural purposes. At the same time, Congress desired to retain control over all coal in these lands for future disposition and development in accordance with our nation's economic needs. Indeed, it is a testament to Congress' foresight that public lands today are the source of one-third of our nation's annual coal production.

The competing claims here involve coalbed methane, a substance that is molecularly bound in coal and liberated when coal is mined. When Congress provided for the agricultural entry and settlement of coal lands, it was already well aware that the coal it reserved included coalbed gases such as methane. Before the turn of the century, Congress enacted a mine safety law to protect miners working the coal in the Territories from the dangerous propensities of

methane and other gases in coal. Shortly before the opening of coal lands to settlement, Congress authorized the first federal research and investigation into controlling this lethal menace to coal miners.

The decision of the court of appeals that coalbed methane adsorbed in the coal is part of the coal reservation is faithful to the purposes underlying the Acts. Insofar as the purpose of the reservation, the decision demonstrates fidelity to Congress' desire to retain all control over the future disposition and development of the coal deposits. It also reflects Congress' plain expectation that homesteaders would not have any competing need or interest in targeting the same resource for commercial exploitation. As history amply proves, there is simply no need to infer that Congress intended to convey title to a constituent of the reserved coal in order to effectuate the purpose of the grant to open the surface of coal lands to agricultural settlement.

Finally, an interpretation different than the one reached by the court of appeals would be enormously impractical. It is unreasonable to suppose that Congress intended to convey an interest in a constituent of coal that it knew existed and would be destroyed when the coal was mined. Moreover, Congress plainly did not intend to burden the reservation in a manner that makes the exploitation of the coal dependent upon the initiative of surface patentees whose interests lie elsewhere. The suggestion that the accommodation doctrine permits such an interpretation is without merit. The accommodation doctrine is not an interpretative aid for ascertaining Congress' intent as to the subject matter of the grant and reservation. Nor can the doctrine sanction an interpretation that would so seriously subvert the purpose of the coal reservation. The judgment below should be affirmed.

ARGUMENT

I. THE RESERVATION OF ALL COAL AND THE RIGHT TO PROSPECT, MINE AND REMOVE IT INCLUDES METHANE TRAPPED IN THE COAL

The source of the controversy here arises from the disposition of public lands under land-grant statutes that departed from the historic system of land classification and, instead, provided for the severance of the surface and minerals. See *Watt v. Western Nuclear, Inc.*, 462 U.S. 36, 47-49 (1983). As it was, the disposition of public lands under the land classification system depended upon their classification as either mineral land or non-mineral land and fee simple title conveyed for the entire land on that basis. *Id.* at 47. Dissatisfaction with this system, largely due to the misclassification of coal lands as non-mineral lands, resulted in series of enactments that shifted the disposition of the public lands from a system of classification to system of mineral reservation. *Id.* at 48-49.

The 1909 and 1910 Coal Lands Acts were the first of those public land statutes whereby an entryman takes title to the surface subject to a reservation of minerals. Act of March 3, 1909, ch. 270, 35 Stat. 844 ("1909 Act"); Act of June 22, 1910, ch. 318, 36 Stat. 583 ("1910 Act") (together the "Acts"). Although, at the time, this new system was novel for the disposal of lands in the public domain, the severance of surface and minerals was already a well-established doctrine of the common law in this country. 3 *Lindley on Mines* § 812 (3d ed. 1914). Accordingly, competing claims, as the ones here, that follow from a mineral reservation enacted by public land grant statutes are not unlike those that arise where the severance is effected by a private conveyance as such. The essential inquiry in interpreting either a public or private grant or reservation focuses upon the

purpose and intent of the grantor. Compare *Western Nuclear*, 462 U.S. at 52 (the determination of what is included in the surface estate or mineral estate made in light of the use of the surface estate that Congress contemplated) with *Vines v. McKenzie Methane Corporation*, 619 So. 2d 1305, 1307 (Ala. 1993) (meaning of the term minerals is not to be determined by rigid definitions, but from language of the grant or reservation, surrounding circumstances, and intent of grantor); *Hartman v. Potter*, 596 P.2d 653, 656 (Utah 1979) (the main object in construing a severance deed is to ascertain intent, especially that of the grantor). The court of appeals' conclusion that methane trapped, or adsorbed, in coal is included in the reservation of "all coal" in the 1909 and 1910 Acts rests firmly on this well-established principle. Pet. App. 14a-15a.

A. The Purpose of the Surface Grant.

Before 1909, the public land laws prohibited agricultural settlement of lands designated as valuable for coal. 1 *American Law of Mining* § 22.01 (2d ed. 1998); Robert W. Swenson, *Legal Aspects of Mineral Resources Exploitation, in* Paul W. Gates, *History of Public Land Law Development* 724 (1968). Despite these restrictions on the preemption of public lands under the homestead laws, vast tracts of federal coal lands were transferred into private ownership as a result of misclassification from either mistake or fraud. *Western Nuclear*, 468 U.S. at 48 n.9; Swenson, *supra*, at 726. Serious concerns with both the efficacy of the existing coal entry laws to support commercial coal development and the loss of federal control over vast tracts of federal coal resources necessary for the nation's future economic vitality prompted a series of executive withdrawals of coal lands commencing in 1906. Swenson, *supra*, at 726-27.

These events caused hardships for agricultural entrymen who had already settled on lands that were later reclassified as coal lands, and thwarted prospective settlement as well. To accommodate the interests in making surface lands available for settlement while preserving federal control over the coal resources vital to the nation's economic well-being, Congress reopened the withdrawn lands to agricultural settlement subject to a reservation of all coal. To address the plight of the agricultural entryman who in good faith settled on lands that were later reclassified or withdrawn, Congress provided in the 1909 Coal Lands Act that the entryman might nevertheless receive a limited patent to the surface. 35 Stat. 844 (currently codified at 30 U.S.C. § 81). The following year, Congress, through the 1910 Coal Lands Act, opened all of the classified and withdrawn coal lands to entry under the homestead laws and allowed "actual settlers" to receive limited patents to the surface land. 36 Stat. 583 (currently codified at 30 U.S. §§ 83-85). In each case, the Acts reserved to the United States all the coal in the lands and "the right to prospect for, mine and remove the same." 30 U.S.C. §§ 81, 83.

The purpose of embarking upon this new system of severance of the surface estate and mineral estate was to open coal lands to settlement and cultivation, but retain federal control over all coal deposits for future disposition and development. 6 *American Law of Mining* § 200.02[2][B] (2d ed. 1998). The purpose of the grant is readily apparent from the titles of the Acts and the language that defines the attendant privileges. First, as the court of appeals found, the title of the 1910 Act clearly explicates that its purpose was "[t]o provide for agricultural entries on coal lands." Pet. App. 16a (quoting 36 Stat. 583). The title of the 1909 Act likewise informs that its purpose

was the "protection of the surface rights", 35 Stat. 844, of those persons who in "good faith . . . entered under the nonmineral land laws," *id.* The titles of both Acts demonstrate that Congress plainly expected that the limited grants of surface land would be used for cultivation.

Second, this understanding is further confirmed by the privilege provided by the Acts for settlers to use the reserved coal deposits—a privilege limited in its purpose and duration. In both laws, Congress allowed settlers to use the coal for on-site, domestic purposes prior to disposal of the coal deposits (initial proviso of 1909 Act; initial proviso of 1910 Act, § 3). As Petitioners would have it, this limited privilege to use the coal deposits would extend until all the coal is mined and carried away. To accept Petitioner's view would in effect be saying that their rights to the coal deposits are coextensive in terms of duration and purpose as the successors to the United States' reservation of all the coal.

The Court should decline the Petitioners' invitation to construe the limited grant "so as produce a result so at odds with the purposes underlying the statute[s]." *Western Nuclear*, 462 U.S. at 56. Certainly, as history amply proves, there is no need to infer that Congress intended to convey title to a constituent of the coal in order to effectuate the purpose of the grant to open the surface of coal lands to agricultural settlement. The same, however, cannot be said with respect to the purpose of the broad reservation of all coal in the lands. As we explain below, the passage of title by implication of a constituent of the coal presents irreconcilable conflicts that thwart the safe, orderly, and economic development of the reserved coal estate. If the bounds of the grant are defined by reference to man's ingenuity to extract constituents from the reserved resource, then the United States and its successors

must wonder what sort of estate the United States actually reserved.

B. The Nature and Scope of the Coal Reservation.

When Congress reserved coal in lands opened to agricultural settlement in the 1909 and 1910 Acts, it used expansive language. The reservation goes to "all coal in said lands, and the right to prospect for, mine and remove the same" as well. 30 U.S.C. §§ 81, 83. Congress' purpose in reserving all coal was to preserve these essential resources for commercial development by those "persons interested in exploiting them", not agricultural entrymen "whose interests were known to lie elsewhere." *Western Nuclear*, 462 U.S. at 47, 56.

It may be true, as Petitioners assert (Pet. Br. 25-26), that the Department of the Interior classified the lands in question on the basis of whether they were "valuable" or "chiefly valuable" for coal. But the manner in which the Department classified the lands is simply beside the point, and does not inform the scope of the reservation. Once the lands were so classified, all coal was reserved to the United States—not merely the "valuable or chiefly valuable" parts or substances that comprise coal. Nothing in the Acts or their history suggest anything less than what the reservation plainly says. See 45 Cong. Rec. 6154 (1910) ("[W]e do not intend that an entryman for agricultural purposes shall acquire *any right whatever in coal* under the surface of the ground he settles upon . . .") (emphasis supplied).

Congress certainly knew well before 1909 that coal contained gases and other substances that were liberated when the coal was mined. The coal miners' lethal encounters with methane and other gases in coal had already received considerable congressional attention. Before the

turn of the century, Congress enacted a safety law "for the protection of the lives of miners" working the coal in the very lands later subject to the 1909 and 1910 Acts. Territorial Mine Inspection Act, Act of March 3, 1891, ch. 564, 26 Stat. 1104. One of the principal objects of that measure was to ensure adequate ventilation through mechanical means for "every coal mine . . . so as to dilute and render harmless and expel therefrom the noxious and poisonous gases." *Id.* § 6, 26 Stat. 1105. In 1908, soon after 1,148 miners perished in a succession of violent coal mine explosions, Congress authorized the first federal investigation and research into the mode of occurrence and the means to control the menace posed by methane and other coalbed gases. Humphrey, *supra*, at iii, 33. See also Rollin T. Chamberlin, *Notes on Explosive Mine Gases and Dust* 5 (U.S.G.S. Bulletin 383, 1909).

When examined in this historical context, the gloss Petitioners place on the legislative history of the 1910 Act takes on a different hue. According to Petitioners (Pet. Br. 30), Congress' intent to liberate the adsorbed gas in coal from the reservation is confirmed by Representative Mondell's resistence to a broader reservation that would include natural gas. The reason for eschewing this broader reservation, Mondell explained, was because the presence of coal "is [so] apparent . . . that it is not difficult to determine approximately the probable extent and area of coal lands, [but] [g]as is found here and there." 45 Cong. Rec. 6044 (May 10, 1910). It is precisely this elusive nature of natural gas ("found here and there"), however, that distinguishes it from coalbed gas. Congress was well aware at the time that methane is "always there" in the coal that it reserved.

The intent the court of appeals gleaned from the Acts and their history as to the scope of the coal reservation

is the one that best serves the congressional purpose. As Petitioners acknowledge, the purpose of the coal reservation was "to secure federal control of that mineral." Pet. Br. 20. See also 6 *American Law of Mining* § 200.02 [2][B] (2d ed. 1998) (reservation "preserved federal control of the coal resources which might exist in the lands"). Yet, the very control the coal reservation so plainly intends is lost under Petitioners' construction which cedes to the surface patentee extraction rights to substances that comprise the coal itself. See Pet. Br. 27 n.15 (reservation of the specific mineral coal in 1909 and 1910 Acts does not include other substances that might be found in coal including methane, water, and carbon dioxide).

The most critical aspect of a grant or reservation in the coal estate is the possession dominion and control over it in order to mine and remove the coal. Without that, the reservation is destroyed. See *Williams v. Gibson*, 4 So. 350, 353-54 (Fla. 1888) (to construe away the right to possess and mine the coal estate is to construe away the grant itself). See also *Lillibridge v. Lackawana Coal Co.*, 22 A. 1035, 1037 (Pa. 1891) (ownership of the coal estate includes the space it occupies). Coalbed gas is physically bound (adsorbed) in the coal and released in the mining process. Chamberlin, *supra*, at 16-17; Kim & Kissel, *supra*, at 23. Because of its explosive and poisonous properties, mine operations must, as a matter of necessity and law, monitor, control and ventilate coalbed gas at all times to avoid explosions and asphyxiation. See Mine Safety Act § 303, 30 U.S.C. § 863. Adequate ventilation "is the most important single phase of mining, one [on] which everything else depends; [and w]ithout [it] no operations are possible." Mosgrove, *supra*, at 207.

As is readily apparent from the nature of both the coal resource and the methods for removing it (whether in 1909 or today), the coal cannot be exploited for its re-

served purpose without the release and expulsion of its methane constituents which Petitioners assert are part of their grant. Indeed, if the grants include methane absorbed within the coal, then, as Petitioners' amici suggest (CBM Ad-Hoc Comm. Br. 25-26), the exploitation of the coal reservation will be followed by compensatory claims for the waste or use of the liberated gas. Postponement or abandonment of mining until surface patentees or their successors commercially extract the methane from the coal is equally subversive to the purpose of the reservation. Such a result "would make the exploitation of the [coal] deposits dependent solely upon the initiative of persons whose interest [a]re known to lie elsewhere." *Western Nuclear*, 462 U.S. at 56. In either case, the reserved coal estate would become servient to the surface grant, a result Congress plainly did not intend. See *Kinney-Coastal Oil Co. v. Kieffer*, 277 U.S. 488, 504 (1928) (a mineral reservation imposes a servitude on the surface estate so that United States may realize a proper return from extraction of the mineral).

The court of appeals' conclusion that adsorbed coalbed methane is part of the reservation of all coal is faithful to the purposes underlying the Act to retain all interests in the coal for subsequent development as well as Congress' expectation that the surface grant would be used by homesteaders who would have no competing need or interest in targeting the same resource for commercial exploitation. Aside from a commercial interest that emerged only once this hazardous component of coal took on a valuable economic quality, Petitioners cannot point to any need for its use remotely associated with the purpose of the grant to open coal lands for agricultural settlement. Of course, as the court of appeals found (Pet. App. 31a), the discovery of value of a component of the reserved mineral does not expand the grant. To conclude otherwise

requires one to infer that Congress intended to make a grant which would gravely diminish, if not destroy, the property and rights it had reserved.

II. THE ACCOMMODATION DOCTRINE CANNOT SUBSTITUTE FOR THE INTENT OF THE GRANTOR

The interpretation of the grant advanced by Petitioners evinces plain infidelity to its purpose. This alone is sufficient to warrant its rejection. In addition, their interpretation is enormously impractical which further verifies that it would defeat Congress' intent.

Coal is an aggregate of physically distinct and chemically different organic and mineral substances with water and gases contained in its submicroscopic pores. See Neavall, *supra*, at 92-93. As a legal and practical matter, a grant or reservation in coal creates an estate in the entire coal deposit. Rather than "deal[] with a practical subject in a practical way," *Burke v. Southern Pac. R.R. Co.*, 244 U.S. 669, 679 (1914), as Congress did, Petitioners reject any readily identifiable bound between the coal and surface estates. Compare 30 U.S.C. § 81 ("The coal deposits in such land shall be subject to disposal by the United States . . ."), and *id.* § 85 (same) with Pet. Br. 27 n.15 (asserting that specific reservation of coal does not include other substances in coal such as methane, water and carbon dioxide). Instead, Petitioners would expand the grant to any substance that man can strip by modern means from the coal's backbone. See Pet. Br. 44 ("Something 'present in' coal is not part of the coal itself").

In order to obscure how their interpretation subverts the purpose of the reservation, Petitioners call upon the doctrine of accommodation. Pet. Br. 48. The accommodation doctrine, however, is not an interpretative aid for

ascertaining the grantor's intent as to the subject matter of the grant. Rather, the purpose of this common law doctrine, like its cousin the doctrine of alternative means, is to adjust the correlative or implied rights of each estate. See 6 *American Law of Mining* § 200.02[1][B], at 200-8 (2d ed. 1998). Quite apart from the accommodation doctrine that comes off the bench only once a conflict arises, the pertinent inquiry for arriving at the subject matter of a grant and reservation is their purpose in terms of the contemplated uses. *Western Nuclear*, 462 U.S. at 52; cf. *Leo Sheep Co. v. United States*, 440 U.S. 668, 680-82 (1979). In this regard, it is unreasonable to suppose that Congress ever intended to convey an interest in a substance that went unnamed in the grant but, nonetheless, knew existed in the coal and would be destroyed in the exploitation of the reservation. Nor is it reasonable to infer that Congress intended to burden the reservation in a manner that would gravely frustrate its purpose as well as severely diminish its value. See Pet. Br. 48 (discussing conflicts, *e.g.*, damage to the coal, explosion and flooding hazards to miners; leaving coal unmined to support gas wells; compensation for use of other estate). There is no reason to speculate about what Congress would have thought about an emerging common law doctrine had "it considered the issue of [coalbed methane] extraction." Pet. Br. 49. The fact of the matter is that in providing for the payment of surface damages, 30 U.S.C. §§ 81, 85, Congress expressly addressed what accommodation was necessary in view of the only common use of the same estate that it contemplated. This should foreclose any argument that title to coalbed gas and, for that matter, any other substance in coal passed by implication under the grant.

In any event, the accommodation doctrine is also inapposite for practical reasons. First, most courts that have

confronted this question consider the doctrine inadequate to the task. See *Vines v. McKenzie Methane Corp.*, 619 So.2d 1305, 1308 (Ala. 1993) (methane and coal mining are inextricably intertwined); *United States Steel Corp. v. Hoge*, 468 A.2d 1380, 1384 (Pa. 1983) (damage to coal is only within coal owner's dominion to inflict). But see *Carbon County v. Union Reserve Coal Co.*, 898 P.2d 680, 689 (Mont. 1995) (coal grantee has mutual simultaneous right to capture gas for safety purposes). Second, the reciprocal right to access one's mineral estate to which Petitioners refer (Pet. Br. 47-48 (citing *Chartiers Block Coal Co. v. Mellon*, 25 A. 597 (Pa. 1883)), is entirely different than the occupation and use of the coal estate in order to extract its constituents. Indeed, as *Chartiers'* progeny makes clear, the reciprocal right to drill *through* the coal to access the gas estate below cannot be extended to sanction a tangible invasion and use of the possessory interest in the coal estate. *Hoge*, 468 A.2d at 1384.[6]

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[6] Petitioners' strain in their reasoning for eschewing *Chartiers'* progeny when they claim that the result in *Hoge* can be explained away by "idiosyncracies [of] Pennsylvania's geology and its 'stratum' theory of minerals ownership." Pet. Br. 49 n.24. Amicus, whose members include those who mine coal deposits in Pennsylvania and in 1909 and 1910 Act lands, must profess an unawareness of any geological anomalies that inform the question differently as to how methane is formed and adsorbed in the coal through coalification. With respect to the so-called 'stratum' ownership theory, the same result was reached in Alabama which follows the nonownership theory for oil and gas. See *NCNB Texas Nat'l Bank, N.A. v. West*, 631 So. 2d 212, 223-24 (Ala. 1993) (conveyance of coal includes the right to reduce to possession any gas trapped in the coal); *Vines*, 619 So. 2d at 1309 (grant of all coal includes total control over any substances within it). There is also a practical difference that deserves mention. Unlike a methane well, a conventional oil and gas well can be sealed below the coal seam, the coal mined, and the well reestablished after mining passes. *See* M.G. Zabetakis et al., *Methane Emissions in Coal Mines: Effects of Oil and Gas Wells* 8 (Bureau of Mines Report of Investigations 7658, 1972).

Because their interests lie elsewhere, Petitioners and their amici can, without pause, dismiss "damage to the coal [as] ha[ving] no bearing on title." Pet. Br. 47. See also Farm Bureau Br. 11; CBM Ad. Hoc. Comm. Br. 27. After all, their lives and livelihoods will not depend upon the physical integrity of the coal seam after it has been drilled and fractured repeatedly. See generally *Legal Environmental Assistance Foundation, Inc.*, 118 F.3d at 1471 (11th Cir. 1997) (describing the results of coal hydrofracturing as fractures that extend several hundred feet with significant amounts of injected fluids, *e.g.*, diesel oil, acids, sand and other additives, left in the coal). But, what strikes us as unprincipled is their attempt to enlist the accommodation doctrine as an interpretative aid, yet dismiss damage to the coal estate as lacking any informative value with respect to Congress' intent. The Tenth Circuit had ample reason for rejecting this ploy. Pet. App. 20a-21a (unreasonable to impute to Congress an intent to convey an integral component of coal that could not be extracted without damage or destruction of the coal).[7]

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[7] To be sure, the contemporary technology that now makes possible the commercial extraction of methane from coal does not give rise to the complete physical destruction of the coal. But substantial concerns exist with the affects they have on mining conditions. Studies conducted by the Bureau of Mines with the cooperation of amicus' members indicate that degasification of coal seams in advance of mining can be conducted while minimizing adverse affects on mine roof conditions. Of course, these studies were conducted under controlled conditions for the singular purpose of improving mine safety—a purpose that is not necessarily in accord with a desire to maximize methane production for commercial purposes. The generally favorable results of these case studies notwithstanding, the Bureau of Mines also concluded that "[i]t is impossible to guarantee that a stimulation treatment of a coalbed will not adversely affect mining in some way." William Diamond and David Oyler, *Effects of Stimulation Treatments on Coalbeds and Surrounding Strata* 45 (Bureau of Mines Report of Investigations 9083, 1987).

Petitioners' interpretation of the Acts also places the coal estate Congress reserved at substantial economic risk. The development of the coal would become dependent largely upon the initiative of others whose interests are not the same as Congress' objective when it reserved the coal estate. The postponement of mining until surface patentees or their successors drain the coal estate of its methane constituents frustrates the original purpose for the reservation, and jeopardizes the federal coal lessee's adherence to the conditions under which the coal lands were disposed by lease. See Mineral Leasing Act, 30 U.S.C. § 207(a) (coal lease terminated if not producing in commercial quantities within ten years, and continuously thereafter).[8] The avoidance of coalbed methane wells by mining around them involves great expense and leaves behind substantial amounts of the coal. At the same time, it serves little purpose because mining around the well isolates the well from the entire coal seam reservoir that serves as the source of methane.[9] Plainly, this

[8] The diligent development and continuous production conditions in federal coal leases require the annual production of at least 1% of the leased reserves, 45 C.F.R. § 3480.05(a)(6), which can mean well over one million tons. The initial satisfaction of this condition often requires all ten years since the planning and permitting of a mine on federal lands often exceeds 7 years.

[9] The amount of coal left behind permanently by this futile gesture toward "accommodation" is substantial by any measure. Using the minimum 300-foot buffer required by the Mine Safety Act, 30 U.S.C. § 877, an underground coal mine with a seven-foot coal seam would leave at least 100,000 tons of coal for a single well. At a surface mine in Wyoming, where coal seams can exceed 70 feet in thickness, the same barrier would force the bypass of more than 1 million tons of coal in place—more coal than almost 90% of the mines in this country produce annually. The above estimates are derived by using a coal density factor of 1770 tons per acre foot of coal thickness, *e.g.* 1 acre x 7 feet x 1770 tn/ft./acre. A 300 foot barrier on all sides of a well results in a 600 foot square of coal around the well which equals 360,000 square feet, or 8.26 acres. In many cases operational considerations would require more coal to be left than portrayed in these examples. The coal is left behind permanently—practical and economic constraints do not permit the men and machines to return later.

is not what Congress contemplated when it opened the surface of coal lands to agricultural settlement, but reserved all the coal for future development.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted,

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